

What is claimed is:

1. An electrode for an alkaline storage battery having a plurality of parallel grooves on one side of an active material-filled substrate comprising a metal porous body substrate having three-dimensionally connected space and an active material filled therein, wherein a coarse in-groove active material layer with a low active material filling density is formed in the grooves and a nearly smooth surface is formed jointly with a dense surface layer with a high active material filling density formed by pressing.

2. The electrode for an alkaline storage battery of claim 1, wherein a dense surface layer and a coarse surface formed on the in-groove active material layer are alternately and regularly repeated in parallel to form a coarse and dense surface.

3. The electrode for an alkaline storage battery of claim 1 or claim 2, wherein the skeleton of the metal porous body in contact with the in-groove active material layer does not have a fracture.

4. A method of manufacturing an electrode for an alkaline storage battery, the method comprising the steps of filling an active material by forming an active material-filled substrate by filling active material paste into a metal porous body substrate having three-dimensionally connected space, forming grooves on one side of the active material-filled substrate, and pressing the electrode formed with the grooves nearly smooth to a predetermined thickness.

5. The method of manufacturing an electrode for an alkaline storage battery of claim 4, wherein the step of filling an active material is a step of filling in a manner such that the active material paste does not pierce from one side of the metal porous body to the opposite side, and the step of forming

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5 grooves is a step of forming grooves on the side the active material paste is filled.

6. The method of manufacturing an electrode for an alkaline storage battery of claim 4 or claim 5, wherein the ratio of the depth of the grooves to the thickness of the groove-formed substrate made by forming grooves on one side of the active material-filled substrate is in the range of 20% to 50%.

10 7. The method of manufacturing an electrode for an alkaline storage battery of any one of claims 4 to 6, wherein the configuration of cross section cut perpendicular to a groove is one comprising walls formed by the shape of two arcs and a flat bottom of the groove parallel to the surface.

15 8. The method of manufacturing an electrode for an alkaline storage battery of claim 7, wherein an angle of invasion as defined by the angle formed by two tangents on a cross section perpendicular to the groove at the line of intersection of the bottom of the groove and both walls is in the range of 45 degrees to 100 degrees.

20 9. The method of manufacturing an electrode for an alkaline storage battery of claim 4, wherein the step of pressing the electrode formed with grooves nearly smooth is performed by a pair of smoothing roller having an axis perpendicular to the direction of the grooves.

25 10. An alkaline storage battery including an electrode group made by winding a positive electrode and a negative electrode with a separator interposed, wherein at least one of the positive and negative electrodes comprises a metal porous body having three-dimensionally connected space and an active 30 material filled therein, a nearly smooth surface is configured by an in-groove active material layer made by pressing a groove-formed substrate layer in which a plurality of parallel grooves

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are formed on one side and a dense surface layer, and is wound around the axis of winding parallel to the direction of the grooves with the side having the in-groove active material layer facing outward.

5 11. An alkaline storage battery of claim 10, wherein cracks are preferentially formed in a wound electrode starting at the line of intersection of the bottom and the walls of the plurality of grooves formed in parallel and the cracks are pressed by the in-groove active material layer.

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